

July 1993

approach

The Naval Aviation Safety Review





**COMMANDER
NAVAL SAFETY CENTER**

During FYs 1988 to 1992 there were 34 mishaps where the only causal factor was material malfunction. Thirty-four mishaps where the aircrew did nothing to cause the mishap and could do nothing to avoid it. During the same period there were 218 Class As with personnel factors as causes and 31 with other than material or personnel as factors (e.g., undetermined). That means 77 percent of our Class A mishaps had some human error as a causal factor.

Since we're the cause of the majority of mishaps, we are also the cure. The challenge is how to prevent mishaps caused by personnel. One way is to apply the principles of risk assessment and management.

Risk assessment and management can reduce the chance of many mishaps. The concept is to identify the risks, then manage or avoid them. It is a process that deserves everyone's participation, from E-1 to O-10.

Here are some guidelines for risk management:

- Make safety a part of your planning. Start as early as possible in planning operations.
- Accept no unnecessary risk. Eliminate hazards that won't interfere with your ability to accomplish the mission.
- Make risk decisions at the proper level.
- Accept risk if the benefits outweigh the cost. Ask yourself if this evolution is worth the risk to you and your organization.

Risk management does not require major paperwork or redundant research. Simply examine your plan with common sense and the knowledge you've received in training and you can identify most risks. If you think the risk is too high, go up the chain to a person who can decide if the evolution is worth the risk.

Risk assessment can require minutes, hours or days, depending on the situation. The more time you have before an event, the more assessment you can do. The more complicated the event, the more assessment and management you should do.

"Guido"

A.A. GRANUZZO
Rear Admiral, U.S. Navy

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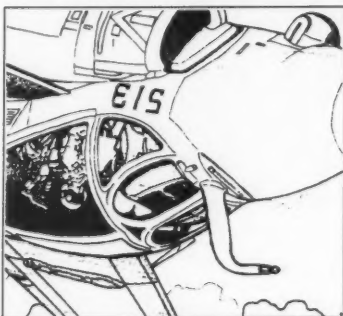
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On the cover:

F-14s of VF-142 and VF-143 on the flight deck.
(Photo by PHAA Young)

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All photos via AW1(AW) P.N. Pero

Another Boring Day in the Gulf

By AW1 (AW) P.N. Pero

October 19, 1984, started like another hot and boring day in the Arabian Gulf. Flight ops would begin just before breakfast for dawn patrol and run through dusk with five flights for the day. Since I was the only aircrewman in an up status, I had been logging quite a bit of flight time during the past month. After flying 10-12 hours a day staring at the radar, I had grown accustomed to the routine.

We launched early for an SSC mission, followed by a hot pump into the next hop, which would take care of some needed quals for the aircrew, and then radar work for the combat crew. Halfway into the second flight, the ship called. The aft lookout had heard an explosion nearby. These reports had become fairly common since Iran and Iraq were trading punches in their war and it had spilled over into the normally calm waters of the Gulf.

As we had done many times before, we immediately plotted all radar contacts in the area and started a search. Arriving at the first contact, we were surprised to find a super tanker sporting a small rooster tail with all hands on deck. The crew were all gesturing wildly and pointing to the northeast, which correlated with our next radar contact.

As we got closer to the contact, the copilot could make out plumes of smoke rising from a spot just out of sight. Reporting the situation to the ship, we increased speed and arrived on top minutes later. A small diving-and-salvage ship was listing badly. Fire engulfed the superstructure.



Smoke rises from the Panamanian-registered salvage ship *Pacific Protector* after an attack by Iranian F-4s.

As we circled trying to find survivors, our ship had begun to close our position and call CMEF for direction. We had to break off the search and head back toward the ship as fast as possible. Two Iranian F-4s were inbound and not responding to calls warning them to stay clear of the area. Minutes later, we flew back into the area since the F-4s had started circling and not continuing to the ship.

We arrived back on station to find the ship's crew assembled on the stern away from the burning superstructure. Two men (apparently injured) were in litters. By this time we were very low on fuel and were forced to return to our ship for a hot-pump. We quickly refueled and swapped pilots, and once again, got airborne.

hover again and in no time, hoisted one injured man into the helo. On the flight back to our ship, we checked the victim for injuries but found none.

We later determined that a small object had punctured the man's body, lacerating his liver. He died within minutes of arriving onboard the ship.

The next hover was almost our last. While talking the pilot over the fantail area and signaling the ship's crew by hand, I had completely forgotten about the ship's superstructure to our left. The second patient had been positioned farther forward. Without realizing it, I was directing the pilot to slide left when the copilot shouted, "Right, right!" We immediately sidestepped to the right. After a



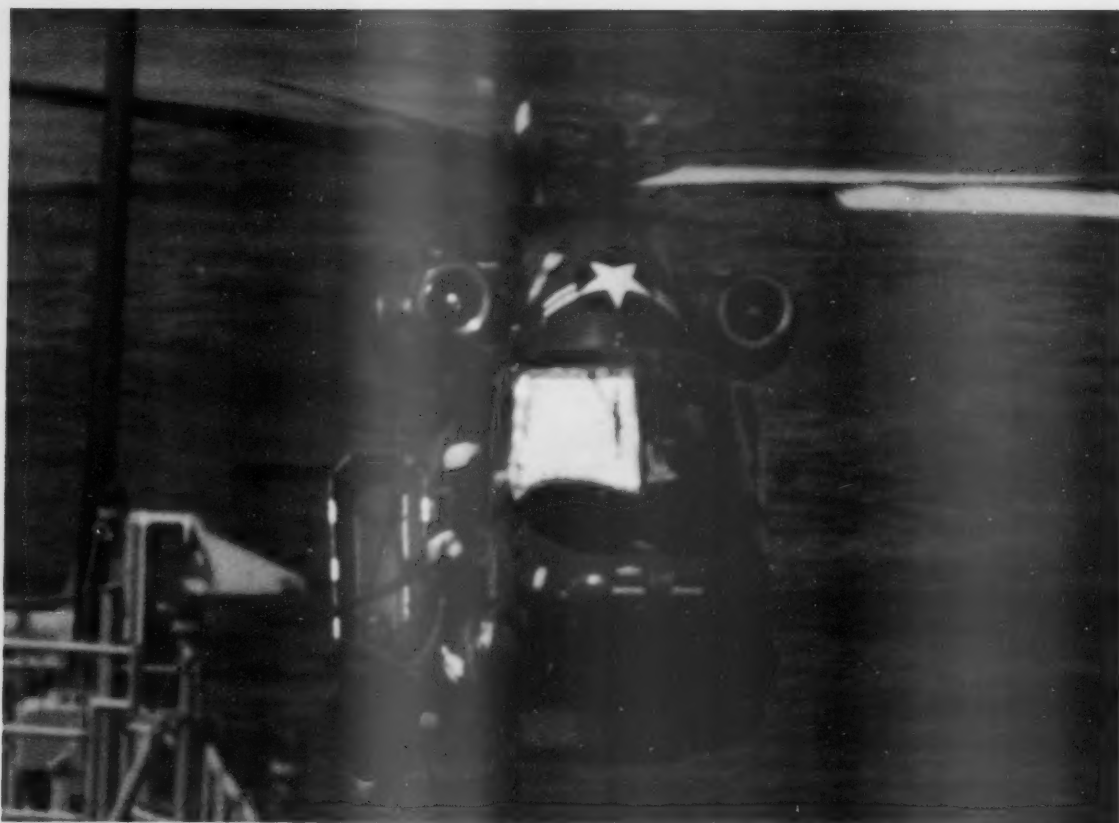
The H-2 approaches the flight deck to bring in the first victim.

During the fueling and pilot swap, I had asked to have my junior crewman (who was med down) accompany me on this flight, which the OINC authorized. Arriving overhead we got the OK to attempt the rescue. The ship had only a small deck area in the stern and the winds made it necessary for a port-to-starboard approach. With no radios available, we relied on hand signals.

We waved off the first approach when large amounts of trash and debris engulfed the area. We then established a hover alongside and through hand signals, got the crew to toss all loose material over the side. We established a

quick rundown of what almost happened, we once again got back to the job at hand.

I signaled for the man to be moved aft and told the pilots I thought he was dead. The litter was completely filled with blood, which covered the man's legs. The OINC said we had to make sure, so after signaling by hand, I was surprised to see the crew signal that he was indeed alive. I lowered the hoist and they hooked up the litter. I began to raise the hoist, but halfway up, the ropes shifted; the victim had appeared tied in, but he began to slide down to the lower half of the litter.



After a 10-mile transit from the burning salvage ship, the H-2 crew prepares to lower the victim to their own ship. Having slid down to the lower half of the litter before leaving the salvage ship, the severely injured man rode in that position for the entire trip between the two ships with the author holding his arm. The sailor remained in the litter only because of the crewman's hold and because his left leg was lodged behind him against the litter.

I relayed this development to the pilots and reached out to grab the man when a blanket that had been placed over his body flew up toward the No. 1 engine's intake. I quickly grabbed it and flung it into the aircraft. Turning back to the victim, I grabbed hold of his arm and pulled, trying to gain some leverage so I could continue hoisting him to the door. As I toggled the switch to raise the hoist, it didn't move. My first thought was that I had lost power.

Looking up to the hoist boom only showed that things were worse. The hoist hadn't lost power, but was at the full-up position and that the ropes that had been rigged on the litter were too long—the litter didn't reach the door. During this time, we had moved away from the fantail since the ship was still burning and erupting with small explosions of glass and metal.

We flew low and slow back to our ship, which had almost reached the area. We held the victim in his litter outside the cabin. We got a green deck and the copilot announced he was going to lower the landing gear. A

quick shout stopped his hand as I explained the litter could be knocked free or crushed if we did so.

What else could go wrong? Well, I had lost ICS at the rescue station during the second pickup. My junior crewman was holding the Senso's ICS cord to my helmet while I talked to the pilots. This cord came apart, so I had no comms with the pilots. Using hand signals and shouting, we managed to hoist the litter to the deck crew only to have them freeze at the sight of the victim. The pilot started to slide left so I shouted for the deck crew to unhook the litter and get the pilot to stop. Luckily, the copilot heard me and told the pilot to stop.

The events in this story are true. The two men died from their injuries. Because of the increased threat of explosion, we didn't return to the tanker and the rest of the crew had to be taken off by motor whaleboat. They had only minor injuries.

AWI Pero is assigned to HSL-40. At the time of this story, he was an H-2 aircrewman with HSL-32's Det 2.

Landing-Mode Lullaby

By Lt. Daniel Johnston

I had been an FRS instructor for nearly two years when, for the first time, I realized my own mortality. It was beautiful spring afternoon in the great Northwest, and I had been assigned a low-level flight with a student in the middle of his navigation phase.

We briefed, manned up and flew the low-level. We even got some decent hits with our bombs at Boardman. To top it off, we returned on VR-1355, which snakes through the heart of God's country in the middle of the Cascade mountains. It was truly a great day to be alive.

As we came off the low-level into Whidbey's airspace, we asked to pick up the final portion of the TACAN approach because we had to do a Landing-Mode approach and I didn't want to have to listen to the controllers on a GCA.

A Landing Mode allows the BN to put the radar cursors on the end of the runway. The pilot's ADI provides steering, both vertically and horizontally, to the touchdown point.

We were headed for runway 7, and while we were on the 11-mile arc of the TACAN approach, I typed all the necessary data into the computer. As I selected the keys, the system began giving us steering to stay on the arc. As we neared the final-approach course, the computer steered us to the end of the runway as advertised.

The field came into the radar's scan and I made the final updates on my nav checkpoints, got a velocity correction, and updated the system altitude. By this time, we were about six miles from the runway and I quickly checked for traffic then came back inside to make sure the landing mode was giving us good information.

Sure enough, everything looked good, but we were going a little fast. By this time we were at about 3.5 miles and were still going 180 knots. I casually mentioned this to my student and he immediately pulled the power to idle and put the speed brakes out. As the airspeed decreased rapidly through 150 knots, the aircraft shook; we were in buffet, but why? I scanned the instruments—airspeed 140, AOA 24 units. Something wasn't right.

We only weighed 34,000 pounds and our approach speed should have been 120 knots at 22 units AOA. My eyes instantly went to the integrated position indicator (IPI), where I saw to my surprise that the gear and flaps were still up.

I yelled, "Power, flaps!" I got an immediate response. The power went to military and the flaps started coming down. Once we were flying again, we got the gear down and landed, minus nothing more than about 10 years off our lives.



About 10 seconds passed from the time I mentioned we were a little fast to the time we recovered at MRT with the flaps coming down. We had lost 500 feet in the near stall and bottomed out at 200 feet above the water.

During the debrief we discussed at length what had caused this near mishap. We decided that we had both gotten so wrapped up in the landing mode—me in the radar and system, and him in following the steering—that we had dropped the landing checklist out of our scan.

Before this happened, I had read mishap reports and wondered how people could do such stupid things. That day I got an answer.

Lt. Johnston is a BN with VA-145.



Peter Mersky

Is This Thing On?

By Lt. Mike Lewis

As a student RIO in the FRS, I was flying with a very senior pilot. We had launched from NAS Miramar, and other than some rather rare southern California IMC flying, nothing out of the ordinary was going on.

We were flying in section with a replacement pilot on our wing, and after completing our first ACM run, it became apparent that my radar was not going to work. We

passed the lead to our wingman for the next run, and started heading south for separation. There was no visible horizon to the south, and as we tucked in under the lead I glanced at my gyro and noticed we were in a 60-degree bank. Looking back outside I was convinced that we were wings level, stepped down from our lead.

"So, this is vertigo," I thought.

All right, he has more important things on his mind than talking to me.

I knew that my pilot was probably going to be in the same position when he came back inside, but there wasn't anything that I could think of to prepare him for it. Sure enough, about 10 seconds later we tightened our turn, and I reasoned that my pilot was trying to get headed back north where the horizon was more visible. A few seconds later, we quickly rolled back to the left; I assumed we were trying to reacquire our lead, who was gone!

OK, we began at 25,000 feet and a glance at the altimeter showed us going through 20K. Still aware of my position as an extremely junior RIO, flying with an extremely senior pilot, I hesitated, knowing that he was almost certainly struggling with vertigo. Then I asked "What's going on?" No reply.

All right, he has more important things on his mind than talking to me. I'll give him a few seconds to get things sorted out. The altimeter continued to unwind at an increasingly rapid rate. My thick shell of unswerving faith in my pilot was beginning to crack.

"Are you all right?" I asked rather loudly. No reply. Sixteen thousand.

"What are you gonna do now, boy?" my drill instructor's query echoed in my mind. It felt as though the answer was burned into my forehead: eject! I rejected that option momentarily (and by the letter of the law, perhaps mistakenly). I was in a good jet with what I still assumed to be a healthy pilot. Yes, we were in a very steep dive through the goo but there was still time if he would just talk to me.

"Hey!" I shouted into the ICS. Silence. Fourteen thousand, altimeter spinning freely.

"Hey!" I screamed into the mike, trying to get some sort of response. No reply. Twelve thousand...

I will never know exactly what the words were that he said at 10K because they came out rather garbled, but I thought he asked, "Where am I?"

I remembered the investigation report from a recent FRS mishap in which an aircraft was lost after departing during weapons checks. The report faulted the RIO for not providing adequate *attitude information*. My eyes snapped from the altimeter to the peanut gyro.

"We are 90 degrees nose down, passing 9,000 feet!" I yelled.

Realistically, it was probably more like 80 degrees and 9,800 feet, but the only digit that mattered to me was the thousands digit. A good, hard pull started immediately and we bottomed out around 6,000 feet.

We got ourselves back together, called our wingman, climbed up, joined him and finished the hop. We debriefed the incident cursorily in the jet, but did not bring it up in the flight debrief. (It turned out that he'd had a bad case of vertigo and was diving for the cloud deck.)

After replaying the incident a thousand times in my mind over the weekend and determining a number of mistakes on my part, I talked to an instructor RIO on Monday.

Airspeed. Did you notice that I never paid attention to airspeed during our rapid descent? Passing up the opportunity to eject at 16K may have been a mistake because we were probably out the envelope by the old standby of 10,000 feet.

ICS Comm, RIO. Despite my position as a junior guy, I obviously needed to be more aggressive more quickly. It's a common problem for junior NFOs to have difficulty taking charge of a situation and telling a pilot (who may have 100 times the experience) what to do. Obviously, NFOs must trust their pilots in order for them to be able to do their jobs, but blind faith is unacceptably dangerous. It doesn't matter who you are flying with, or how benign the environment.

ICS Comm, pilot. Unnecessary chatter on the ICS should be discouraged, but when a pilot is having a problem flying an aircraft, for whatever reason, he must tell the other aircrewmen immediately to prevent them from taking matters (and ejection handles) into their own hands.

Debrief. No matter how senior you are, 'fess up. Everyone will have a bad day at some point, and as long as the aircraft is parked on the line, everyone in the aircraft will benefit from an explanation of what caused the incident, and what the crew members could have done to break the chain more quickly. Equally true, no matter how junior you are, if you are not satisfied with an explanation, demand a more thorough debrief. You won't learn anything if you leave the squadron with questions in your mind as to what you should have done. ◀

Lt. Lewis flies with VF-154.

Too Close for Comfort

By Lt. Jeff Lincoln



As we approached the 90, I could see that the other trainer was at the opposite 90.

It was a beautiful summer day in southern Alabama. I was a student pilot at VT-6, and I was flying the pattern at OLF Baron Field, just west of Pensacola with my instructor in the back seat. It was my precision Aerobatics-4 (safe for solo) flight. I was almost done—just precision landings to knock out. The first one was OK, but I needed to do a couple more to convince my instructor that I was proficient in this maneuver.

My pattern work was going smoothly on the second precision approach. I did the landing checklist on downwind and set up my power, nose attitude, and trim for the precision landing.

At the 180, I made my necessary radio call. At the same time, I heard another T-34C pilot call, "Low key." He was in the opposite pattern for the same runway doing a PPEL. The course rules said that PPELs and normal landing patterns could be set up to the same runway with the PPEL pattern taking priority (in a conflict, the T-34C in the normal pattern was to go around). It was too early to determine if there would be a conflict, so we continued the approach.

As we approached the 90, I could see that the other trainer was at the opposite 90.

"I'm waving off," I said matter-of-factly to my instructor.

He replied, "No, continue."

I didn't want to argue with an instructor on a safe-for-solo checkride. That was mistake number one. At this point in my training, I had only about 45 hours in the aircraft and had not flown my formation flights yet.

As I continued my approach, I became increasingly concerned about the fact that I was converging on another aircraft. I said to myself, "The instructor is testing my judgment; I should wave off."

"Sir, we're getting too close. I'm waving off." The instructor came back with a resounding, "No! Just stretch this 90 out a little deeper and come in right behind him." I repeated mistake number one.

That other T-34C kept coming closer and closer. All I could think about was that I had never been that close to another aircraft. I was definitely uncomfortable with the situation. I ignored that little red light glaring out of my AOA indicator. Mistake number two.

The next thing I knew was the most eerie sensation I've ever had as I sat there inside the 90, below 400 feet AGL, with a limp control stick in my hand. Everything seemed to go into slow motion. My instructor and I both

instantly realized what had happened: the deadly approach-turn stall. We reacted simultaneously. As I was moving my left hand forward to firewall the PCL, it was already moving forward faster; the instructor had it. I was centering the ball and relaxing the stick. By the time the airflow started moving over the control surface, and we recovered, the aircraft had descended to 120 feet and banked to nearly 45 degrees.

I flew the aircraft out, made my waveoff, and looked for the other aircraft. I'll never forget the awful sensation of a limp control stick, the seemingly slow motion of events, or being able to make out individual pine needles on the tops of the trees we recovered above.

As I flew down the runway and climbed back up to altitude, my instructor was livid, screaming, "You almost made spaghetti out of us! Didn't you see that red light above your glare shield?"

I was mad, too. Mad at myself for not doing what I felt was right for me, and mad at my instructor for coercing me into continuing when I wanted to wave off.

We discussed this at length as I completed the rest of my landings and flew the course rules back to Whiting. I knew exactly what I had done. The instructor agreed that he shouldn't have said no to a waveoff call. Because we had both learned from our mistakes, I was allowed to fly my PA-5 solo flight.

Every aircrew member has a valid right to call a waveoff. Every crewmember should stick up strongly for his opinion. Recognize that every pilot has a different level of experience, especially early in flight training. What may seem like a normal maneuver to one pilot can be very uncomfortable to a less experienced one. I had very few hours and no form experience at the time of this flight. I was uncomfortable with rapidly closing to within a couple of hundred yards of another aircraft. However, to the instructor, who taught formation, this wasn't even close to getting him concerned. At that stage in my training, the other aircraft got all my attention. I should have stuck to my guns and either waved off or turned the controls over to the instructor and let him fly.

Too often, junior pilots repress their feelings to please the aircraft commander. They don't want to cause disharmony and become known as a troublemaker. An aircraft commander needs input from his crewmembers. Everyone in the aircraft should be comfortable with the maneuvers

Lt. Lincoln flies the SH-60B with HSL-42's Det 3.

Blind Luck

By Lt. Rob Paredes

We have a favorite saying in naval aviation when we have a close call: "Boy, I just dodged that bullet!" Well, here's a story about a close call, but I can't use that particular phrase because the bullet missed *me*.

The squadron was finishing its workups and it was finally the day to fly home. I was the lead with the XO in my right seat for the first three-plane to fly off the boat for Whidbey. Only one person per cockpit was at the brief because the air wing was still flying the last hops. We planned to recover the event, and the aircrew from that hop, who was scheduled for my event, would rush to the ready room to pick up their bags. Then off we'd all go.

I briefed the hop, remembering the platitudes about fly-offs being one of naval aviation's most dangerous evolutions, but neglected to cover in detail landing an aircraft at the field after a month on the carrier. I made the unforgivable assumption that my wingmen would cover all the landing considerations in their individual crew briefs and that they had the experience to handle anything unexpected at Whidbey.

We launched, rendezvoused and headed for home. The winds were in our favor and everything was going smoothly. The frequency switches went fine, the formation work was above fleet average and the weather was beautiful most of the flight. After Center switched us to Approach, we heard the controller tell another aircraft that an EA-6B had just landed and reported the runway conditions as poor because of water on the runway from a passing rain shower. I considered breaking up the flight for individual approaches (after the hop the XO said he had thought the same thing), but Approach said the break was open and the weather was fine. I elected to bring the three-plane into the break.

I had briefed if the break was open we would enter it, but I hadn't briefed break interval. We came into the break, proud warriors after an arduous month at sea, and Dash 2 set a crisp, three-second interval. Keeping in mind the earlier report of poor braking, I planted my jet at the end of the runway to use all 8,000 feet, and aerobraked until the nose fell through. Since the tires were still at





He touched down at 1,500 feet and was quickly eating up the remaining pavement.

Peter Mersky

carrier pressure, they did not grab the runway well. I felt the aircraft slipping and sliding a little but I had it under control by the 2-board.

I had landed on the left side of the runway but the turnoff was to the right. As I was about to turn right and exit the duty, the XO quickly exclaimed, "Stay on your side. Dash 2 is coming up fast!" The nugget pilot in Dash 2 had flown a fast approach and flared his landing. He touched down at 1,500 feet and was quickly eating up the remaining pavement. He was in a tough position and was a lot faster than he had ever been. There was little runway left and his tires were skidding. Because Dash 3 was right behind him, Dash 2 had to pass up the long-field arresting gear.

I watched in horror as Dash 2 went racing by me; I was sure I was about to see a first-hand demonstration of the overrun gear. But Dash 2 did a great job veering into the hold-short and using that extra distance to get control of his jet and stop. Dash 3 had heard all of our frantic calls on base radio and wisely took the long-field gear. I taxied back to our line, very angry with myself knowing full well how lucky the entire flight had been not to end up in a tangle of jets at the end of the runway.

What lessons did I learn? From the bloody debrief I learned a few key ones that I'll follow the rest of my flying days. First, fly-ins are one of naval aviation's most dangerous evolutions and we are only inviting disaster to start one out by not having everyone at the brief. If op

tempo dictates that certain crews need to fly events the morning of the fly-off, then other crews get the good deal of that first fly-off.

Second, brief all the contingencies in detail, especially if you're doing something you haven't done in a while. We had more than 5,000 hours of combined experience in my cockpit, but there was fewer than 1,000 hours in the cockpit of Dash 2. A lot of the techniques regarding landing a jet after a month at sea that were second nature in my cockpit were not so apparent to the more junior crew.

Third, brief all maneuvers like you're still in the FRS. I had briefed that we'd go into the break at homeplate, but I hadn't briefed the interval. This was Dash 2's first experience landing an A-6 on a wet runway with tires at carrier pressure. If he had known what it would be like, I know he would never have broken three seconds after me. It was my fault as lead for putting him in that position.

Finally, listen to that little voice and communicate your thoughts to the other guy in the cockpit. Both my XO and I considered breaking up the flight, but neither of us said anything. We both agreed during the debrief that if one of us had mentioned it to the other, that's probably what we would have done. It would have been the much safer way and saved me from a few premature gray hairs.

Sometimes you blindly walk right in front of the gun barrel but luck intercedes and the bullet misses you. That's not the way I want to fly.

LT. Paredes is a pilot with VA-155.

A Mishap Investigator's Guide to Survival

By LCdr. Randy King



“You’d better come to the duty office. We’ve just had a midair.”

I thought of a hundred possible scenarios when the duty officer appeared at my door with those words. The reality was worse than my wildest nightmares. The midair collision had occurred 20,000 feet above the high desert. One aircraft crashed less than two miles from the collision point. The pilot was killed when the aircraft came together. This aircraft crashed at the North Site, as it became known, on the side of a steep mountain ravine, 800 feet above the desert floor.

The second aircraft, badly damaged but still flyable, turned toward the nearest suitable field, NAS China Lake. Despite the pilot’s successful handling of an engine fire and numerous other major systems failures, this Hornet, was doomed as well. Loss of the nozzle from the still operating engine resulted in insufficient thrust for level flight. The pilot ejected after traversing 40 of the 70-plus miles to his divert; he was only slightly injured. The South Site, 40 miles from the North Site, was scattered across half a mile of shifting sand dunes.

Reaction by local law-enforcement authorities and China Lake personnel was swift and correct. Initial efforts focused on locating the sites and the pilots, and on securing the wreckage.

The AMB mobilized and the squadron began initial data collection and reporting. Once assembled, the AMB proceeded to China Lake. Armed with the mishap-investigation kit, the AMB conducted site surveys.

The following morning the investigation began in earnest. During the next three weeks, we examined the two sites and removed the wreckage. Crucial components underwent Engineering Investigations (EIs). We used radar reconstruction to establish aircraft flight paths. We finished retrieving data from aircraft computer memories and storage units. The AMB began to concentrate on compiling and analyzing the data as it became available, and writing the report.

After a short extension while the aircraft manufacturer and subcontractors reconstructed the severely damaged mission computers, the MIR was released a little more than five weeks after the mishap. Followup paperwork, including the CO’s endorsement and letters of appreciation, took another two weeks. Here’s what we learned.

No premishap plan will be useful unless it has been exercised to work out the bugs...

Premishap Planning

Almost any mishap will generate a great deal of initial confusion. Ours did. The primary functions of your premishap plan are to report time-critical items and collect data. Simple step-by-step instructions following a checklist work best. Divide duties among the watchstanders you expect to be present. Plan for every contingency. No premishap plan will be useful unless it has been exercised to work out the bugs and kept current through frequent review.

Mishap Investigation Kit

The Safety School provides an excellent list of items you should include in your mishap investigation kit. We found only one deficiency. Modern aircraft include composites that present hazards to mishap investigators and people removing the wreckage. Gloves and respirators are a must. Wetting agents should be used to prevent loose fibers from becoming windborne. Consult your emergency reclamation expert and have a plan for dealing with composites.

Your mishap investigation kit must be portable. We blew this one. All our gear was nicely stowed in cruise and tool boxes. Cruise boxes are hard to carry over rugged terrain. Since the mishap, we've stowed our kit in frame backpacks. Standard Marine Corps issue, these backpacks are available through the supply system and serve the purpose nicely. Our parariggers also moved all the tools from a metal tool box to a custom tool roll with slots for each item.

Funding

Every mishap investigation of this magnitude requires funding. Don't get caught short of funds or the investigation may come to an abrupt halt. Your type commander provides funding. Have your supply officer immediately begin identifying how much you will initially be allotted and how you get it. Transportation, lodging, food, supplies, and phone calls must be paid for. Wreckage removal, site surveys, and photographs may all be provided by public works or outside contractors. They are a super source of assistance, but can't help you unless they know who's footing the bill.

A job order number will be your best friend, particularly if the facility providing support is not your home base and is a Navy Industrially Funded ((NIF) activity. Your type commander may have an existing account or he can provide funding documents to begin one. It is not a problem the average fleet guy likes to deal with, but "Have job order, will travel" is the rule for lots of places. Once funding is in place, life gets much easier.

Working Space

If a mishap occurs away from your home base, your initial logistical efforts should include securing a location from which to base the investigation. At a minimum, you'll need phone service (DSN if possible), administrative support, and room to accommodate at least 10 people. Access to a FAX machine is very helpful.

Communications

Our mishap epitomized the need for good real-time communications. With two widely separated investigations involving fixed- and rotary-wing aircraft, vehicles, and remote crash sites, staying in touch was a real problem. Ideally, you will have access to as many of the following as possible:

- A portable radio capable of communicating with aircraft on both VHF and UHF. Ours was a backpack size unit acquired from Desert Range Control.
- Walkie-talkies for coordinating ground search and wreckage removal efforts. Most base operations departments have FM units you can use.
- A cellular telephone. Probably the best means of keeping everybody in touch, one portable cellular phone at your crash site will be a godsend. Check with the telecommunications branch of your public works department to see if any are available for emergency checkout. Failing that, your air station or air wing may be able to provide. Cellular coverage is rapidly expanding and chances are you will be able to "reach out and touch someone" from almost any mishap site.

Use of People

Establish a single point of contact for the investigation. At first, we had people scattered all over the desert, requesting the same things from different people, and different things from the same people. One person needs to have the big picture. The safety officer is probably a bad choice since his expertise will be needed at the site(s), where he will often be incommunicado. This person should be constantly available in your working space to take and make phone calls and coordinate the logistics.

One person needs to have the big picture. The safety officer is probably a bad choice...

The hangar reconstruction of a mishap aircraft is an important part of the investigation.



All requests for supplies, personnel, assistance, lodging, transportation, and money should be routed through him. Our Maintenance Material Control Officer took this bull by the horns. His experience in dealing with the supply system coupled with his knowledge of the military and people made him an excellent choice.

Carefully select the people you assign to the Aircraft Mishap Board. Your standing AMB should certainly include competent, experienced personnel, but the investigation can bring the squadron machinery to a halt if you put the maintenance, operations and admin officers on the board. You may find yourself doing most of the work and your productivity will probably reflect that fact. My experience has been that the standing AMB will seldom match the one you put in your mishap report. If members of the standing AMB are unavailable, select replacements with the duration and intensity of the investigation in mind.

Our AMB members were, of necessity, exclusively dedicated to the investigation for five weeks. Don't be afraid to change the board members and submit an amended mishap report when the dust settles. Remember, it may take a day or so to identify the senior member, who must come from outside the command on all Class A mishaps.

Site Security

Local law enforcement personnel will quickly lose interest in watching your wreckage. Most military installations have some sort of security force, augmented to re-

quired strength, during emergencies. Request assistance through the chain of command early on. If you are forced to man site security with your own personnel, be sure you provide the proper shelter and clothing for the environment. Base recreation departments can usually supply camping gear. Never allow weapons. A safety board can not use force to protect broken aircraft parts or preserve evidence. We borrowed a handheld radio from the local sheriff's department; our security personnel could use it to call law enforcement assistance if necessary.

Aircraft

Transporting people and supplies to remote site(s), searching for and removing wreckage, and photographing sites may be impossible via ground transportation. If any distance is involved, if the site is in a very rugged or remote location, or if aerial photos are desired, aircraft may be needed. Helicopters are ideally suited for most of these roles. We used Hueys, H-46s and Cobras. Nothing beats an H-46 for pulling large pieces of aircraft off the side of a mountain.

Carefully plan and brief all helo operations. External cargo lifts are always dangerous. We also used our home base's light twin and contract civil aircraft to move personnel. Helo range is limited, especially when extensive hovering is required at the site. Stationing a fuel truck near the crash site allowed the helos to fuel there, eliminating the long trip back to China Lake.

Engineering Investigations

Hand carry and accompany all EIs to the activity accomplishing the task. Though your actual presence during the investigation may not be required, make sure you speak to the engineer, brief him on the mishap and detail the information you are trying to obtain. Placing your engines and ejection seats on a truck and pointing them toward the nearest NARF without proper coordination and accountability is a sure formula for disaster.

Data Retrieval

The wreckage of your mishap aircraft may have a story to tell. If the aircraft is a Hornet, it may tell a lot. F/A-18s and other new aircraft have data-storage devices which can be invaluable in a mishap investigation. Computer memories may also be reconstructed even if the circuit boards are badly damaged. Complete parameters of the aircraft's operation may be available up until the moment of power loss. Like EIs, this perishable data must be properly handled and accounted for from the moment it is removed from the site.

Video tapes from tactical aircraft HUD recorders are another source of data. If the tape is in questionable condition, placing it in the player to "see what we've got" may be a very bad move indeed. Take it to an expert.

Radar Reconstruction

If your mishap occurred in the air, and the aircraft flight path may be important, make one phone call ASAP: Call the National Transportation Safety Board (NTSB) and get in touch with their radar-reconstruction experts. Efforts to figure out what happened in a no-witness or no-survivor mishap may key on radar reconstruction. The NTSB can identify any radar site which may have been illuminating the aircraft involved, allowing you to make the necessary calls to preserve the data. You can then analyze it at your leisure.

NTSB computer analysis of radar data can correlate data from different sites and create a coherent three-dimensional diagram of the flight path. If pieces of the aircraft are scattered over a large area, radar may help pinpoint their location.

A caution here. The NTSB does not have the same

Naval Safety Center policy, as directed by OPNAVINST 3750, is to send a mishap investigator (MI) to every Class A mishap where there is some aircraft hardware to inspect. (Class A indicates fatalities or damage of more than one million dollars.) In cases where nothing has been recovered—such as an aircraft in deep water with no survivors—MIs go only if directed by the commander of the Safety Center.

Whether an MI arrives at the site of a mishap or not, Safety Center's code 13 (Aircraft Mishap Investigation Division) is available to answer questions and to help with other types of mishap investigations, particularly those involving Class B or C damage. This assistance can address areas such as wreckage recovery and layout, coordinating aircraft mishap boards, and EIs.—Ed.

confidentiality standards as military AMBs. Though an excellent resource, they should not be included in AMB deliberation or given access to privileged material. "Just the facts, ma'am" is a good motto around everyone, especially all non-official people.

Witness Interviews

Interview all possible eye witnesses. Use a tape recorder. Don't forget the witness-statements-and-privilege brief. Aircrew interviews should be recorded and interviews should be accomplished as soon as the aircrewman is available. Follow this up a day or so later with a written statement or another interview.

Give the witness a transcript of his post-mishap statement before the second interview. It may help to refresh his memory and will promote more accurate recall. Transcriptions of statements are time consuming and may not always be necessary but are very helpful during AMB deliberations. You'll eliminate a lot of time arguing about what "I thought he said..."

Notebooks

Give every member of the AMB a "wheel book". Instruct them to write down the full name, rank or rate, phone number and address and command of every person they come in contact with, along with the date and type of participation. Not only will you need this information again and again during the investigation, it will prove an invaluable tool when you write your Letters of Appreciation.

Letters of Appreciation

Don't let your skipper surprise you when, as the investigation winds down, he suggest you write "a few letters, thanking the folks that lent a hand". If you used your notebook from the beginning, this is a breeze. A phone call to the person in charge of organizations involved usually fills in any missing information. People love to see their name in print. We generated over 150 letters and award nominations. These people probably won't receive any other thanks for their efforts and you never know when you might need their help again. ◀

LCdr. King is an F-14D pilot with VF-11. He was assigned to VX-4 as the squadron safety officer at the time of the mishap described in this article.



Angelo Romano

“515, You’re on Fire,”

By LCdr. J.P. Patten

We’d been on station forever. Summer and fall in the IO, mostly SSC hops, with an occasional bombing or ACM sortie. Our air wing was in the doldrums—same thing for days and weeks at a time. My pilot and I had been together for all the workups and most of the cruise.

Our mission was overhead tanker. It would be a muggy, late afternoon launch and we were already wondering what the movie would be that night. We moved to cat 4, went into tension, saluted, and waited for that heavy-tanker kick.

Halfway down the stroke, we were staring at red lights all over the cockpit. The fire lights for left, right, then the nosewheel wells were on steady by the end of the stroke.

“Uh, oh,” I said.

“I see ‘em,” my pilot replied as we cleared the deck with good thrust and steady climb. You’ve got to love those big J-52s.

After we dropped four full tanks and a buddy store 400 yards

ahead of the ship, the Boss went ballistic. I tried to explain that we had fire lights off the cat, but I gave up my public-relations career to concentrate on my instrument scan.

My pilot had pressed through the boldface and called for the PCL. We agreed to get the fuel dumps on and start a climbing turn downwind. The aircraft was still flying, climbing and accelerating. We didn’t have any secondary indications of a fire and we were thinking electrical problems.

As I started boldface notes and cautions, we heard many variations on this dreaded call.

“515, you’re on fire, eject, eject!”

Still no secondaries in the cockpit. We looked outside and saw only a stream of white fuel from the wings and fuselage dump masts. NATOPS says to eject. Fortunately, my brilliant and talented pilot realized immediately what had happened. He secured the dumps and screamed, “Don’t go yet!”



Eject, Eject!"

After what seemed like an eternity (only a few seconds), the calm, reassuring voice of the captain came over the radio asking if we had just secured our dumps.

We replied that the dumps were now off, and he promptly declared that we were not trailing smoke. We learned later that the aircraft, dumping fuel, had flown across the sunset and it had seemed to everyone on the ship that we had a giant, smoky fireball behind us. In fact, several people tried to call for ejection as they saw our sunset flyby.

At this point, we saw only three fire lights; we decided to keep dumping while the ship made an emergency pull forward so we could recover.

After the crisis had stabilized and we were sure we were not on fire, the CAG LSO came over the radio to ask us to push the press-to-test button for the master warning lights. My now hero-for-life pilot did so and the fire lights all went out!

Typically, back on deck, the troubleshooters could not duplicate the gripe.

Don't fall prey to the doldrums. Just when you think you're comfortable, fate will strike with a vengeance. Know boldface better than cold. Imagine staring at three fire lights off the cat and listening to voice screaming for you to eject as you go over your EPs.

Don't get involved in a major radio analysis of the situation until you know that you can save yourself and your aircraft.

Although we received AIRPAC's Pro of the Week citation, as well as a BZ from *Approach* (August 1986), half of those polled said that we should have ejected with a second visual confirmation of fire, as NATOPS says. I believe that we would have jumped if it had not been for my pilot's exceptional SA and quick response. ◀

LCdr. Patten flies with VA-34. He was a lieutenant with VA-52 at the time of this story. His pilot was then Lt. Craig Miller, a reserve adversary pilot from Miramar.



Are You Really "CLEARED TO LAND"?

By LCdr. Ed Wolfe

Lt. Steven Halsted

When you're "cleared to land" you can *assume* the runway is clear and all you have to do is concentrate on a "centered ball" pass all the way to touchdown, right? Maybe not!

An A-6 FRS crew returned to base from a night out-of-area FCLP sortie. They hot-refueled at an MCAS before returning home, taking extra fuel to allow them to perform several ACLS approaches.

Cleared for multiple approaches, they flew three Mode II approaches to a touch-and-go and a fourth to a full-stop landing. Their aircraft was still too heavy for a normal touchdown on the first three landings, so the approaches were flown to a flare point and then to a minimum rate-of-descent landing. The fourth approach was flown to a normal rate-of-descent full-stop landing.

This crew didn't know that after their first approach, another A-6 was cleared to "position and hold" onto the duty runway to await takeoff clearance. The pilot taxied onto the runway and held with his external lights and taxi light on. After holding for four minutes, and without warning, the crew on the runway saw an A-6 fly directly over them and make a touch-and-go on the runway in front of them.

After uttering a few choice words about the tower controllers, they asked to clear the duty, canceled their clearance, taxied back to their line and shut down. They had just been reminded of the innate, unforgiving nature of naval aviation and since this was their *third* jet of the evening, they were convinced that it was not their night to go flying.

A review of the tapes indicated that the tower controller had put the A-6 on the duty runway at position-and-hold and planned to clear it for takeoff after the landing traffic had cleared the runway. Meanwhile, another

aircraft waiting to cross at the end of the duty received permission to cross. The tower controller subsequently forgot the A-6 on the runway. He then cleared the A-6 on the ACLS approach for a touch-and-go via the ACLS controller.

The aircrew in the A-6 flying the ACLS approaches never saw the aircraft on the duty runway. They were unaware anything unusual had happened until the ODO talked to them after their full-stop landing. The pilot had flown needles to approximately 200 feet AGL and then transitioned to the meatball for landing. The replacement BN was concentrating on copilot duties and his scan for the night CQ pattern at the boat.

This incident involving aircrew in two different aircraft—both following all procedures and directions issued by ground and airborne controllers—very nearly became a tragic mishap. Although neither crew was aware of it at the time, a little luck and sound aviation procedures prevented this mishap. The crew flying the ACLS approaches flew to a flare point and did not let the meatball sag as some do when flying minimum-rate-of-descent landings. The crew in the A-6 at position-and-hold set up to use the entire length of the runway for takeoff, leaving no wasted runway behind them for their takeoff roll.

Neither crew involved will ever take ATC instructions for granted. ATC personnel are highly trained, but are human and subject to the same occasional lapses that aviators are. You should visually check the runway yourself when you get that "cleared to land" call. You might also question why you have been at position-and-hold for four minutes. Someone may have forgotten you. ◀

LCdr. Wolfe is an A-6 pilot with VA-42.



By Lt. Jerry Stokes

A short FCLP period at night turned into a mid-night weather divert to El Toro. The next morning, we couldn't get our right engine to spool past 60 percent on the start. We spent the rest of the day talking to our maintenance guys on the phone, exhausting a long list of troubleshooting tricks. Late in the afternoon, after resetting some obscure circuit breaker, we finally coaxed the engine into starting.

After reactivating our clearance and running through the checklists one last time, we taxied to the hold-short. A few moments later we were in the air headed home.

The flight was OK until we dirtied up at six miles on Mode II final for Miramar. During the landing checks, we noticed that the max-rudder indicator was hung up between 20 and 6 degrees, a possible ratio-changer malfunction with a corresponding reduction in rudder throw. When asked if the rudders felt restricted, the junior 3P in the left seat replied that they felt normal at 150 knots. Because we could control the aircraft and we were only a few moments from touchdown, I decided to continue the approach to a field arrestment rather than ask for a holding clearance to troubleshoot.

We were already on final for runway 24R and I declared an emergency with Approach, telling them that I

wanted to take a trap on that runway. Only four miles from touchdown, I decided to keep my head outside for the trap instead of burying it in the PCL to decipher the procedures. Likewise, I decided against switching seats with the 3P because of our low altitude and position on final.

Inside three miles, Tower asked if we could accept runway 28. I said we could—a major error in headwork. We were now over the field, in a 20-30 degree bank at 150 knots—not where we wanted to be with a potential flight-control problem. We reported abeam for runway 28 and flew a solid, slightly fast pass to a field arrestment.

I should never have accepted the runway change when I was already on final for the first one. I opted for the quick, straight-ahead arrestment in the first place because I wanted to avoid the increased power settings and turns associated with a missed approach that might compound a controllability problem in case an engine failed.

When you declare an emergency, tell the folks that you're dealing with what you want to do, and stick to your guns. Have a plan and carry it out. Indecision only confuses and aggravates the situation.

Lt. Stokes is a squadron LSO with VAW-112.

Blown Tires, Smoking Hubs

By Lt. Peter Ulrich

Few mishaps are the result of a single error or mechanical failure. As I stared at my smoking F-14, which was sitting in a puddle of hydraulic fluid, the chain of events and decisions leading up to my predicament ran through my mind. Where had I gone wrong?

The flight started uneventfully enough. It was a sunny Friday afternoon at NAS Oceana as we briefed for our last bounce period prior to FleetEx. The plan was for a quick FCLP session at the outlying field, followed by a hot pump and hot switch and bingo to the O Club. Although I had only been out of the FRS for seven months, this was the culmination of a long summer of predeployment detts and work-ups. I felt comfortable in the jet. I had no doubts that I could handle anything it could throw at me.

During pretaxi checks we noted that the anti-skid system failed its on-deck test. This problem was common enough not to excite comment, and we continued with the mission. Once airborne, we discovered that the OLF had just closed indefinitely for FOD on the runway. Falling back on Plan B, my RIO got clearance to enter the ACLS approach pattern for some practice Mode IIs at homefield.

As I tried to dirty-up on base leg, the flaps failed to lower, although the handle moved freely. I told my RIO of the flap-slat lockout, and we pulled out the PCL to troubleshoot. We then prepared for a no-flap landing.

"Let's see," I thought, "clearance for a full-stop instead of a touch-and-go. OK, approach speed. What was our fuel weight? Hmmm, 7K, 51K gross, should be about 155 KIAS on-speed. Should we dump? Nah, 3K below max trap will be fine. No need to climb and take it back out over the water." I wanted to get this bird on deck so maintenance could get it fixed and not lose a sortie.

Our approach was to the right, an 8,000-foot runway. The left had 12,000 feet available.

"Do you want the long runway?" asked my RIO. Our air wing's A-6 squadron had the left runway clobbered with FCLP players since the OLF was closed. We considered the benefit of an added safety margin of 4,000 feet of braking room versus the inevitable hassle and delay of trying to break into the left pattern or clear those guys out of our way. Why, we might even have to declare an emergency!

"Nah," I replied, "if I don't like the way she's slowing down, I'll power up and take it around." Implied were the unspoken words, "Come on, I can hack it." As I was to shortly relearn, any time you let outside factors affect your judgment in the jet, a "routine emergency" can quickly turn into an unnecessary mishap.

We pressed on with the approach. I decided to leave the flap handle up for the approach and landing to guard against inadvertent movement of the control surfaces in close. I'd lower it upon touchdown to regain the outboard spoilers for braking. I flew a red ball to touchdown, using all of the available runway.

It was not the best landing I've ever made. Falling into the usual mistake pattern, I got fast in close and made a large power reduction. As the plane slowed down, I was afraid to add power right at touchdown and ended up over-correcting to a slow cocked-up position with a hefty rate of descent. We landed hard, compressing the left strut far enough to bang the left engine burner can on the ground, although we didn't discover this until later.

The warm, hazy weather resulted in surprisingly poor visibility down low. Another link in the chain: I didn't see the T-2 landing in front of me from the tower pattern. There was no radio call to clue me in, as we were still up on approach freq. Normal traffic separation is 3,000 feet, and the field controllers are comfortable with that distance between aircraft. The T-2 was recovering and was fairly light. He used aerobraking to slow down before his midfield turnoff, but my approach speed was much higher than normal because of my no-flap configuration.

It is true that Tower has the responsibility for ensuring "safe" separation between landing aircraft, but I think the biggest causal factor here was a subconscious expectation that since we were landing on the runway normally reserved for instrument traffic, there wouldn't be anyone else in front of us. I should have been more vigilant than normal since I already knew that the left runway was full, and all other pattern traffic would be to and from the right runway.

We also failed to tell our controller about our abnormal configuration and the requirement for plenty of rollout room. Relying on the controller to look out for you is never a good idea anyway. All pilots who have survived for any length of time out there are practicing paranoids.

Despite all this retrospective good sense, the first time I saw the other aircraft was as we touched down and the nose fell through. The image of a plane on the runway ahead shimmered out of the haze like a desert mirage, a mere 2,000-3,000 feet in front of us. I had no idea at the

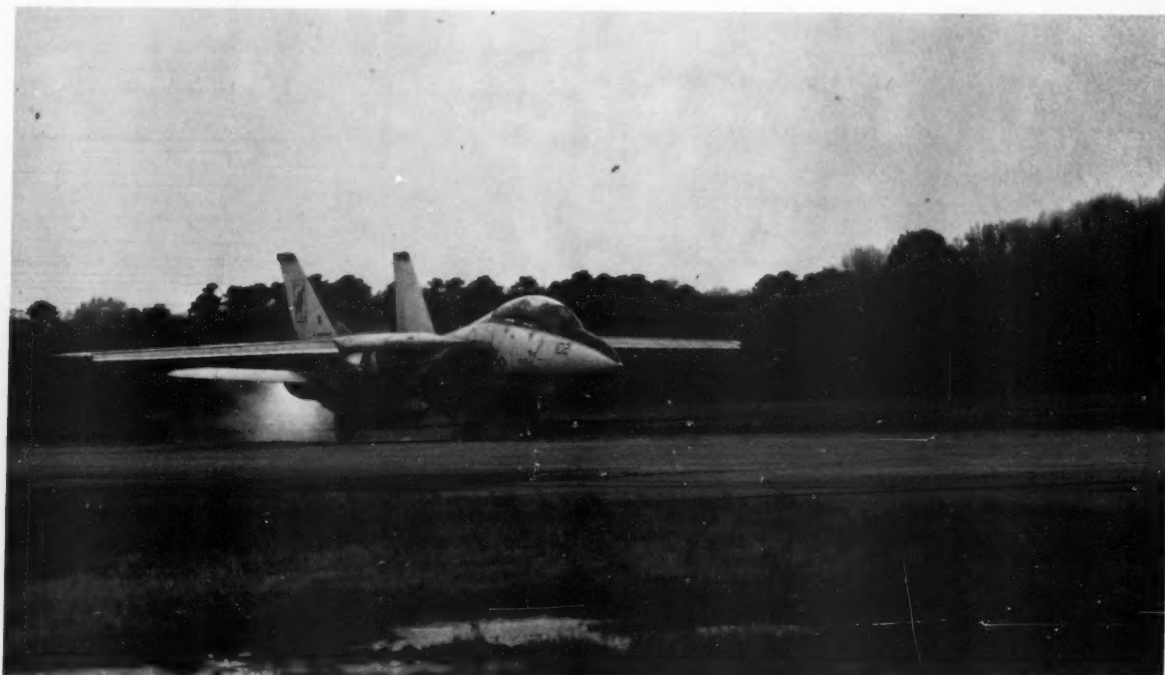
time where it had come from. Was this the result of an aborted takeoff? Was the plane about to exit the runway?

Flabbergasted, I called out on the ICS, "There's a plane on the runway!" Judging by the rate of closure, we were going to have to do something very soon. In a fraction of a second, thoughts raced through my head. I looked down. We were still at about 140 knots and already passing the short-field gear. As slow as the T-2 was, he had to be preparing to exit the runway soon, but hadn't begun to turn or even move left yet. No room to get around him; what about over? No, without flaps we would never get the altitude to clear him in time. I was going to have to get on the binders before we hit him—at 140 KIAS! Easy does it.

Boom-Boom!

From day one at the RAG, all Tomcat pilots have the magic number 80 knots drilled into them. Don't get on the brakes before 80 knots or you'll blow a tire. At 140 the mainmounts never had a chance. Without anti-skid, both blew immediately, which probably saved us from worse damage.

I immediately engaged nosewheel steering and was able to keep the jet more or less on centerline throughout the rough ride. The T-2 finally cleared the runway at midfield, just in time, as my skidding, smoking jet came through and missed his by 30-50 yards. We continued on down to the long field gear where the nub of our port mainmount knocked it out of battery and stopped us.



Peter Mersky



Peter Mersky

As the still-smoking hubs were sitting in a pool of hydraulic fluid from the brake lines, we decided the better part of valor was to shut down and egress, getting on deck just as the crash crews arrived. Relief at being in one piece was quickly followed by chagrin, and then anger at that idiot in front of me! Where did he get off clogging up my runway? Sober reflection though, put the blame squarely where it belonged—with the overconfident aircrew who put themselves in a position from which there was no escape.

If you're no-flap, always tell Tower and get the longest available runway. Just clueing the controllers in to our problem would have probably prevented any conflicts with other traffic. It also would have helped if the controllers were talking to each other. Approach was working with me while Tower was talking to the T-2, but neither controller was talking to the other.

Always dump down to the minimum comfortable fuel state for the conditions. When trying to slow down, just five knots less on touchdown can mean getting to brake speed 2,000 feet earlier. Why make it hard on yourself?

Fly the real emergency the same way you train. I should have made a centered ball pass as practiced during FCLPs. Worry over using all of the runway resulted in poor landing technique, which ultimately caused the majority (in terms of dollars) of the damage. Burner cans are expensive!

In an abnormal situation, make every decision as if

you're going to have to justify it to a mishap board, and when confronted with a non-immediate action emergency, slow the problem down. There was no need for us to rush all of our troubleshooting and landing preparations into a four-and-one-half minute period. By blowing two tires, I didn't invent anything new. All I managed to accomplish was joining the ranks of "Those who have..."

Lt. Ulrich is an F-14A pilot with VF-14.

The T-2 entered the pattern via the break. The trainer was at the 180 when Tower called, "Cleared to land on the right runway inside an F-14, full-stop at five miles." The controller was using anticipated and reduced runway separation. Had the F-14 crew told Tower or Radar about their problem, Tower would have used same runway separation (6,000 feet).

All GCA/ACLS approaches are coordinated between Tower and Radar using visual communications (VISCOM) equipment. Radar advises Tower of aircraft type and requested approach at seven miles by pushing a series of buttons and displaying the information in the tower immediately.

Radar also tells Tower when the aircraft is at five miles and three miles. At three miles, Tower decides whether to clear the aircraft for the requested approach or wave it off, depending on pattern traffic, via the VISCOM. Any amplifying information goes through intercom.—ACCM (AW/SW) D.G. Faudie, Naval Safety Center air-traffic control analyst.

Me King Kong

By Capt. Frederic G. Ludwig, Jr.

You name it, I've flown it! With more than 6,000 flight hours without a scratch, flying fighters all my life, I had an ego bigger than the world. I was King Kong. There was nothing I couldn't handle.

When I was the CO of VX-4, I was scheduled for a warmup flight in an F-14. I'd had the flu for the past two weeks, but I felt fine now. I briefed for a benign 1 v 1 intercept with another Tomcat. The flight went fine and I was beginning to feel like King Kong again.

On the last setup, I decided to do a low-to-high intercept. I planned to get about 6,000 feet below the bogey and make a 180- intercept with no offset. At about three miles, I would do an Immelman to arrive about one mile at his six o'clock, take a Fox 2 and head home.

Everything went fine until I was at the pull-up point. I yanked the stick into my lap and pulled up into the bogey with a 6-G pull. Again, everything went well until I was about 60 degrees nose up. I began to feel myself start to gray out, then all the lights went out.

I then felt like I was back in my childhood bedroom waking up to the warm sun in my face. I felt really good about things. But that feeling was soon disturbed by another sound: the cockpit noise of the Tomcat. As my vision focused—I only had tunnel vision at that point—I realized that although I was still in the jet, I had no control. I could see that my arms

were shaking but when I tried to move them, I couldn't.

As my vision expanded, I slowly regained control of my reflexes, grabbed the stick and rolled the aircraft upright.

"OK," my RIO said, "knock it off. Let's RTB." That sounded good to me.

On the way home, I asked him if he had noticed anything strange. He hadn't. It was about this time that the shear terror sunk in. I had experienced a for-real GLOC episode. I was never so happy to be alive, but I couldn't believe that it had happened to me. Not until I was safely on deck did I finally admit to my RIO what had happened. I guess I was out about 15 seconds and he never knew it. It took me two weeks before I could talk to the ready room about my experience.

No one is really King Kong. I had been sick for the previous two weeks, which had seriously weakened my G tolerance. However, I never gave it a thought. I also learned that a G-warm-up maneuver is critical before any ACM. I now live by this axiom.

There's a lot of information available about G straining maneuvers and breathing.

Learn them and use them. If I had done a high-to-low intercept on the last run, culminating in a split S, I wouldn't be here.

Capt. Ludwig is the Commander of CVW-15.



Peter Mersky

An AC's

V Viewpoint

By AC2 Chris Mendenhall

Lt. Mike Harrison



Controllers prefer that a pilot ask a question than to assume he has the "big picture".

I've been a Navy air traffic controller for seven years. I've always enjoyed reading *Approach* articles, which are sometimes funny, sometimes hair-raising, and sadly, sometimes tragic. Here are some situations that I and my fellow controllers have encountered recently.

Probably the biggest problem is noncompliance with ATC instructions. More specifically, pilots leaving ATC-assigned altitudes—even in IMC, where you would think attention to detail would increase—without knowing the possible consequences.

I vividly recall one instance. The weather was solid IMC and I was working departure control. A Coast Guard C-130 had just made a southbound departure, climbing to 3,000 feet. Shortly thereafter, a locally based F-14 took off on a similar routing. Though it was already specified in the SID, I reiterated the 1,500-foot altitude restriction for the F-14 to ensure separation, as the C-130 was passing 2,600 feet. The Tomcat pilot acknowledged the altitude and read it back to me.

My attention was momentarily diverted to other aircraft under my control, and when I scanned back just seconds later, I noticed the altitude readout on the Tomcat passing 2,200 feet and climbing. At roughly 300 knots, he was closing rapidly on the slower C-130. I immediately told the F-14 to level off and vectored him away from the Coast Guard plane.

Another F-14, from the same squadron no less, did the same thing just 10 minutes later. This time, it was an unsuspecting A-6 that was the target of the "innocent" intercept. At the time, neither F-14 crew was aware of how close to disaster they had come.

The next most common problem we encounter is when flying or controlling becomes routine and we let our guards down. In my experience, most incidents occur when the traffic load is reduced. We must condition ourselves to always function as though we were busy and allow our training and experience to come as second nature.

If there is something you are not familiar with or just don't understand, ask! Controllers prefer that a pilot ask a question than to assume he has the "big picture". We are here for you! That's our job, and we take great pride in doing it to the best of our ability.

During emergencies we need you to communicate with us. For some reason many pilots don't tell the controller when they have a problem. I realize that inflight emergencies require your complete attention, but a quick word with your controller will make it easier for him to help you.

One case in point was an A-6 pilot who requested to land only seconds after takeoff. Now, we know that indicates a problem or at least an unexpected development, yet this aviator insisted that he was not declaring an emergency nor did he require any assistance. He just wanted to land. Subsequently, the aircraft was vectored for a straight-in approach and slipped into the normal flow for the runway. As it turned out, he was forced to declare an emergency on short final with a combined hydraulic failure, which didn't give the tower much time to get the necessary equipment and personnel onto the field.

Not only did this aviator risk his own neck, but he temporarily closed the duty runway to other traffic. With a little coordination, fire and rescue vehicles, medical personnel and an LSO could have been on-station to assist; an off-duty runway could have been used.

Pilots should visit their local ATC facility. See what kind of conditions the controllers work under, and what different services they can provide on request. Ask questions! Share information and experiences. Maybe periodic meetings can be scheduled for controllers and aviators to discuss problems and solutions. There should not be any barriers between us. We work much better as a team. ◀

AC2 Mendenhall is assigned to the Air Traffic Control Facility at NAS Oceana.

BRAVO ZULU



Left to right: AMS2 Lee A. Hilligas, Lt. Robert E. Livingston IV, Lt. Michael D. Tanner, AE1 Jeffrey L. Markel

Lt. Michael D. Tanner
Lt. Robert E. Livingston IV
AE1 Jeffrey L. Markel
AMS2 Lee A. Hilligas
HC-6

Four hours into a CV ammo offload, the CH-46 hovered over the drop zone on an AOE, perpendicular to the ship's centerline, while positioning a 3,500-pound external load for VERTREP drop. The aircraft and load began to settle with the load resting on another load on the flight deck midway between the T-line and T-ball line.

AMS2 Hilligas (second crewman) called for Lt. Tanner (HAC) to move the aircraft up one foot and forward five feet to clear the load on deck. The helicopter continued to settle as Lt. Tanner increased collective and Lt. Livingston (copilot) saw the Nr drooping through 90 percent. The No. 2 engine's Tq needle was near zero.

AMS2 Hilligas pickled the load and closed the rescue hatch to ensure water-tight integrity. Lt. Tanner transferred control to Lt. Livingston, who had a clear view of the aft part of the flight deck, the only clear area available to land. As Nr continued to droop, the copilot maneuvered the aircraft for landing while AE1 Markel

(crew chief) made calls to keep the helo clear from the numerous loads on deck. Lt. Livingston landed perpendicular to the ship's centerline with approximately 80 percent Nr.

After shutdown, inspectors found that the No.2 engine's fuel line from the engine oil cooler to the static fuel filter had chafed on the power-turbine lube scavenge line, causing engine fuel starvation. ◀

Capt. Scott A. Thomas, USMCR
VMA-131

At 15,000 feet MSL, during a PMCF, Capt. Thomas disconnected his A-4M's flight controls to complete the rate-of-roll test. A normal test produces roll rates of five dps or less. The aircraft rolled rapidly to the left at more than 45 dps. Capt. Thomas applied full right stick but could not right the A-4. The Skyhawk rolled inverted as the nose fell 20-30 degrees below the horizon.

The pilot decided to continue the roll and level the wings as the A-4 rolled upright. He was partly successful, but with the nose down and the aircraft accelerating, the disconnected elevator did not have enough authority to level the jet.

Capt. Thomas pulled the throttle to idle and extended the speedbrakes, but neither action had any effect. Passing 9,000 feet, as a last resort, he lowered the flaps to try to reduce the airspeed and his descent rate. This procedure was not in NATOPS but turned out to be the right decision because it allowed the elevator to become effective, just before the pilot would have had to eject.

The A-4 leveled off at 6,000 feet, but Capt. Thomas still had to fly home using both hands and a knee to hold the control stick to the right. He made a field-arrested landing.

Postflight investigation revealed that the Skyhawk's new starboard aileron had a 1.5-degree warp, invisible to the naked eye but confirmed by a straightedge. The warp was enough to deflect the control surface and cause the rolling motion. Above 180 KIAS, the manual flight controls did not have enough authority to counter the roll. If Capt. Thomas had encountered the problem after a partial disconnect or total hydraulic failure, he could not have recovered. ◀





Back row left to right: RM1 William Hess, ADC James Mathers, AEC Michael Asencio, AT2 James White, AT1 Mark Houser, Ltjg. Susan Cobb, AT2 Thomas Rivenburgh

Front row left to right: AT2 Jimmy Combest, AE1 Kenneth Underwood, Ltjg. Tom Maurer, Lt. Clare Walker

Crew members not shown were not available when photo was taken.

LCdr. John Hall
Lt. Clare Walker
Ltjg. Scott Evans
Ltjg. Thomas Maurer
Ltjg. Susan Cobb
ADC James Mathers
AEC Michael Asencio
AE1 Kenneth Underwood
RM1 William Hess
AMS1 Darryl Douglas
AT2 Thomas Rivenburgh
AT2 James White
AE2 Andrew Pearse
AT2 Jimmy Combest
AT1 Mark Houser
AMH1 James Burns
AME2 Jeff Westlake
VQ-4

Nappy 62, a TACAMO E-6A Mercury, with a junior cockpit crew, was near full-mission weight (340,000 pounds) when it hit several dense flocks of seagulls. It hit the first flock near rotation speed, approximately 140 knots, the second at 10 feet AGL, and the third at approximately 30 feet AGL. Lt. Walker, a new PIC, indicated that the aircraft was clear of the birds at approximately 100 feet AGL.

As the E-6A climbed, Ltjg. Evans (PAC) noticed moderate vibrations in the airframe. The aircraft climbed to the IAF holding pattern so the pilot

could check controllability, and dump fuel before landing. ATC controllers told the crew that the runway at Patuxent was being cleared of airframe fragments and bird debris.

AEC Ascencio (FE) told Lt. Walker that the aircraft's four turbofans had ingested numerous birds. Other crew members checked for structural damage and determined that the E-6's nose radome was severely damaged, which was causing the vibration.

After checking controllability and dumping fuel, the crew decided that all flight controls and engines seemed to be working normally. Ltjg. Evans flew the approach with unreliable airspeed and AOA indications because the birds had hit the pitot static probes on the nose.

During landing rollout, as the flight-deck crew deployed the thrust reversers, the crew heard loud rumbling noises in the No.4 engine. Lt. Walker secured the engine and taxied to the hangar.

Besides the badly damaged radome, there were numerous bent fan blades in the No.2 and No.4 engines, as well as many dents on the airframe. The two engines and the radome had to be replaced. The crew estimated that several hundred birds were near the runway during takeoff, and that they struck 30-40 birds. ◀

BZs require an endorsement from the nominating squadron's CO and the appropriate CAG, wing commander, or MAG commander. In the case of helo dets, the CO of the ship will suffice. A 5x7-inch photo of the crew by a squadron aircraft should also accompany the BZ nomination. Please include a squadron telephone number so that we can call with questions.

Maj. Michael J. Doyle, USMCR
VMFA-112

Maj. Doyle was on an approach to NAS Dallas when the caution indicators illuminated for FCES, FCS, and MECH-ON. The Hornet can respond violently to the transition from computer-controlled flight systems to purely mechanical control.

Following NATOPS procedures, Maj. Doyle immediately climbed to a safe altitude and set half flaps. Then he tried to reset the FCS without success. He discussed his options with the ODO while checking controllability. Despite degraded controls, which made the aircraft porpoise on final. Maj. Doyle made a short-field arrested landing.

Inspection of the flight-control computer indicated an improper CAS position feedback for the servo cylinder for the starboard stabilator in all four channels. This failure caused both port and starboard servos to go into mech reversion. Fortunately, this emergency happened in the slow-flight regime. ◀





Left to right: Capt. Al Gutierrez, USMC; 1stLt. Tom McKean, USMC; SSgt. John Taylor, USMC; LCpl. Doug Bowling, USMC; LCpl. Dean Smith, USMC

Capt. Al Gutierrez, USMC
1stLt. Tom McKean, USMC
SSgt. John Taylor, USMC
LCpl. Doug Bowling, USMC
LCpl. Dean Smith, USMC
HMM-164

Knight rider 07 was inbound to USS *Tripoli* (LPH 10) with 2,500 pounds of mail. The ship was two miles off the coast of Somalia as part of Operation Restore Hope.

As the CH-46E (SR&M) approached short final for spot 2, the crew heard and saw indications of the No.1 engine winding down. They then heard a loud bang from the engine compartment. Capt. Gutierrez (HAC), in the right seat, immediately took control and maneuvered the aircraft away from the rising deck edge.

While descending to establish the helicopter in ground effect and gain airspeed, the crew saw the No.1 engine's fire-light handle illuminate. They began single-engine emergency procedures and secured the No.1 engine. The fire light went out,

but hydraulic fluid was pouring into the engine compartment.

The HAC turned toward Mogadishu International Airport, radioed the tower to declare an emergency, and made a single-engine landing.

The line to the No.1 engine air-particle separator (EAPS) had ruptured, spraying hydraulic fluid into the engine, resulting in a compressor stall and fire. ◀

Lt. Mark McLaughlin
Ltjg. Brian Treat
Lt. Greg Crockett
VA-155

Lt. McLaughlin (pilot) and Ltjg. Treat (BN) launched from USS *Ranger* (CV 61) as a maxi-tanker for a 1+45 cycle. They were late because their KA-6's D-704 buddy store had to be replaced. They rendezvoused with an S-3 for a package check, and extended the drogue.

As the drogue came out, it felt slightly rougher-than-normal to the intruder crew. Lt. McLaughlin said later, "It seemed as if someone was tugging on the hose, then it stopped."

The S-3 crew saw that the KA-6's hose and drogue had extended, then separated from the buddy store. The Viking crew used a flashlight to confirm that the hose was gone and that there was some unidentifiable fluid trailing from the store.

Lt. McLaughlin and Ltjg. Treat exhausted NATOPS trying to transfer the remaining 1,800 pounds of fuel from the buddy store. The only options seemed to be to risk trapping with a full store or to jettison the store.

Lt. Crockett, a BN serving as SDO on the ship, remembered a similar problem during his last cruise. He quickly consulted with maintenance on disconnecting the cannon plug to the buddy store's control panel, which might allow a fuel transfer.

Ltjg. Treat used his pocket knife to remove the buddy store panel from the console, and disconnected the cannon plug. The fuel transferred normally. ◀



Left to right: Ltjg. Brian Treat, Lt. Greg Crockett, Lt. Mark McLaughlin

Eee-uuuw!

There's a Civilian on My Tomcat!

Get Him Off! Get Him Off!



By Lt. Terry Moran

PH2 SD Hoffman

When I got to my fleet squadron from the FRS, I went on an out-and-in round robin.

After we landed at Whidbey, our nosewheel steering didn't work, so I shut down at the transient line and walked over to a visiting F-14 squadron to get help. I made sure the NWS was fixed, then filed to fly back to homeplate. I briefed the civilian plane captain at the transient line on the particulars of the F-14 and the dangers of getting too close to the intakes and stabilizers when running onboard checks (OBCs). He assured me that he was familiar with the F-14 and that there would be no problem.

After startup, I ran my OBCs and signaled complete to the plane captain. I noticed he was pointing toward the right stabilizer, signaling that there was a leak there. I tried to ask if the leak was hydraulic, and if it was small or large, but he did not understand me. I gave up trying to communicate and gave him a thumbs-up. I intended to taxi to the

visiting F-14 squadron and have a troubleshooter take a look at the problem.

At this point, I noticed the master caution light illuminate because of a ladder light. I was amazed to see that the plane captain was now standing on the ladder, with his cranial unfastened and other FOD hazards in his pockets. It seemed he thought he would have better luck communicating with me up there on the canopy rail. I waved him down rather forcefully and he retired to a safe distance. The rest of the launch and flight back was uneventful. When I landed I called the transient line to ensure that the plane captain would not do that again.

I also learned my lesson: do not take anything for granted. Brief all the basics to all transient-line personnel, particularly the dangers of intakes and of a turning aircraft's engines. I assumed he had enough sense to stay away from the intakes. It never occurred to me he was unfamiliar enough to get on the aircraft

boarding ladder, only a few feet from the starboard intake.

The time to inspect your plane captain for FOD is before you climb into the cockpit; it's too late once you start up. Finally, next time I will be more aware of the people outside the aircraft, particularly at transient lines. I did not know the plane captain was near the aircraft until after I figured out what the master caution light was about.

Never use sign language to communicate complicated ideas. It will never work and in this case it spurred on my well-meaning plane captain to put himself in danger. I should have given him the turnup sign for taxi and pointed to the visiting F-14 squadron's line. Two complete thoughts, two signals.

I did not immediately shut the engine down. I was shocked that anyone would get on the boarding ladder while the engine was turning and it caught me completely by surprise. If it happens again I will be ready. ◀

Lt. Moran flew with VF-114.

Somewhere in the Indian Ocean, February 1988—

"...and if it's not a controlled ejection I'll try to get out an 'Eject!' call. If there isn't time, you'll probably get the hint when you see a bunch of smoke and glass."

The words, spoken by one of the squadron's senior BNs during my first fleet tour, were refreshingly sensible. I have always been suspicious of the three-eject-calls, pound-your-partner-in-the-chest-three-times methods of letting another crewmember know it's time to put his trust in Martin-Baker. I readily confess that visions of my right arm leaving my body shortly after the second chest thump—but before the third—have crossed my mind on various occasions. Of course, none of this would matter since I would never have to eject. That kind of thing happened to other people.

NAF El Centro, October 1991—

"...and if we have to eject for whatever reason, assuming it's uncontrolled, I'll try to get out an 'Eject!' call but don't expect me to hit you in the chest. If I can't make a call and you see a smoking hole where your pilot used to be..."

Speaking with Your Seat

By Lt. Carl Oesterle

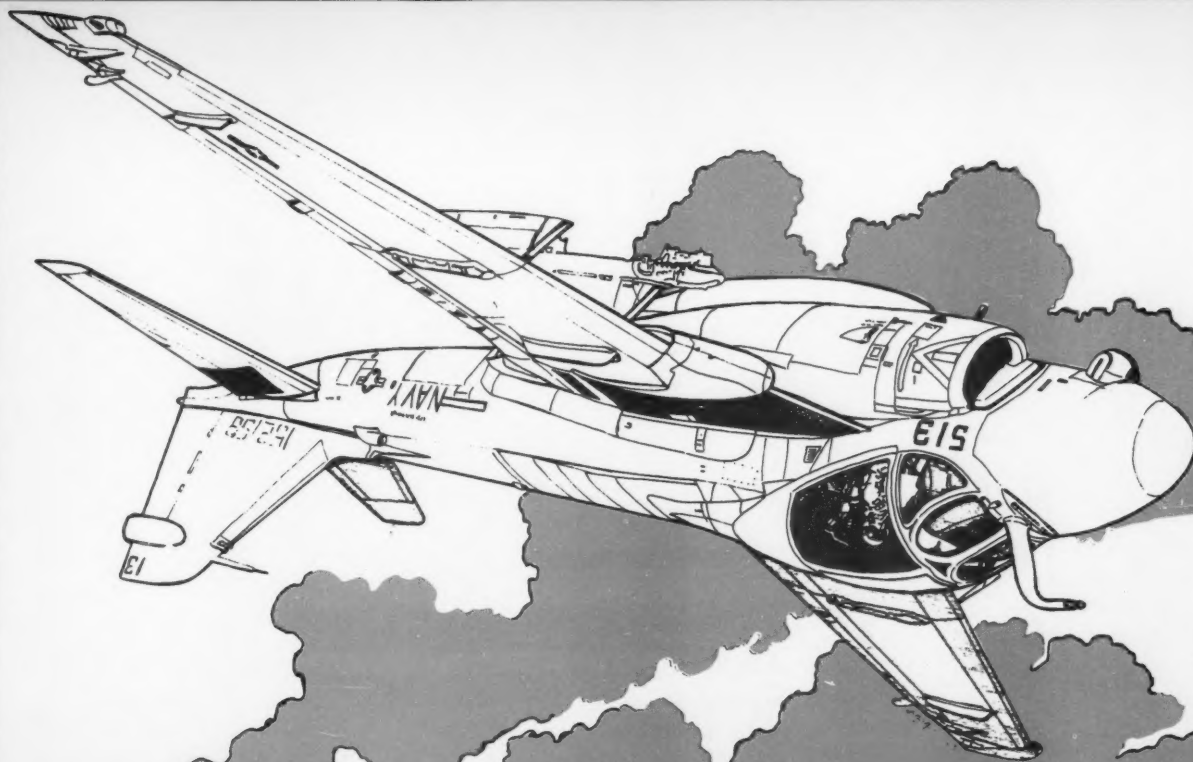
Our individual brief concluded, my BN and I suited up for a close-air-support mission to a target area near Twentynine Palms. I was now an instructor pilot at VA-128, charged with passing along all the words and deeds of wisdom I had witnessed in my three years in the fleet.

We would be Dash 3 of a division of A-6s working with a Marine FAC on the ground near the target. The flight to the target was uneventful and before I knew it we were copying time hacks and double-checking switchology.

"Three's pushing." Timing and target acquisition became priorities. "Three's IP, inbound." Not so easy getting a lot of speed on the airplane in 110-degree weather, loaded with fuel and heavy bombs. But by the time we called "Three's popping," we were doing about 440 knots. Acquiring the target was hard because of the angle of the late-afternoon sun and Dash 1's smoke. Sure enough, there it was—dirt, right there in the open—and by golly, I was going to bomb it.

"Three's wings level." I peered through the gunsight as the FAC cleared us in hot. We had regained the knots lost in the pop and I pickled at 1,100 feet. Then I pulled the stick back until the nose was level with the horizon. A hard, right 40-degree turn to the next checkpoint. I rolled out just as I spotted Dash 2 a few miles ahead. And then it happened—nasty grinding noises and a sudden deceleration, followed quickly by a rapid roll to the left. It's funny how time slowed down. I knew immediately that we would have to eject.

The airplane was doing things I wasn't telling it to and I really wanted to stop the ride so we could get off. By the time we were inverted, I had my left hand on the lower handle but waited until I saw sky again before I pulled. If I had been using the VOX feature of the ICS, I would have been able to give my BN a heads-up. As it



was, with my right hand on the stick and my left squeezing the yellow and black out of the lower handle, I wasn't able to say diddly.

My BN had been looking back to our right to spot the hits and remembers turning back just in time. (Pay attention! This is good.) He saw my boots at his eye level, smoke and glass everywhere. It didn't take him long to follow my lead. I had, as my fleet CO used to call it, "spoken with my seat."

Things deteriorated so quickly that I had made no effort to attain any semblance of proper body position, which is probably why I woke up clueless and only about five seconds before I somersaulted backward into a sagebrush. The wind blast had blown my helmet off, ripped my oxygen mask from its regulator and taken most of my short-term memory as well. An outstanding job by the FAC (his team on the ground) and my division lead in the air diverted a Marine CH-46 to rescue us and take us to Twentynine Palms for a checkup.

No, you may not always have enough time to warn

your crewmember. Using the VOX feature of your ICS may indeed help when you need to scream the "E" word. Always brief your emergency ejection procedures. You won't always have time to stow your kneeboard and lower your seat.

Try, really try, to get in proper body position. I am lucky that I didn't injure my neck or back. Because I ejected with my right hand still on the stick, I have a right arm that is slightly, but permanently, bent from being cracked like a whip. A-6 NATOPS specifically addresses "injured arm" post-ejection procedures—for good reason. Check yourself out once you hit the deck (particularly if you're a single-seat guy or if you find yourself alone).

When the seat fired, my head hit my knees and a piece of the canopy glass put a nice slice in the back of my neck—another good reason to get into the proper position. I had no idea I was pumping blood overboard until my BN's eyes got big and he told me to sit down. ◀

Lt. Oesterle is assigned to VA-128.

...I really wanted to stop the ride so I could get off.

By LCdr. Joseph J. Romano

Things That Go *Bump* on the Runway



We were on short final for a practice no-flap landing. I was in the right seat as the instructor. As we touched down, I heard a “thud” aft and below me on the right side of the aircraft...or I thought I did. We decelerated normally and turned off the runway to taxi back for more pattern work. I asked the flight engineer and the other pilot if they had heard anything, but they hadn’t.

As we taxied, the FE looked at the runway and saw that the arresting gear was out of battery. I called the tower to tell them. The other pilot and FE were convinced that the noise I had heard was just our P-3 rolling over the arresting gear, but I had my doubts.

As we approached the hold-short, one of our P-3s was in the high-power area and I asked its pilots to check us over. They said that our plane looked fine. Nonetheless, I was still concerned about the noise I’d heard. Much to my crew’s dismay, I decided to taxi back to our line.

As we began our turn back, the other P-3 told us to hold our position. They said the outboard tire on our starboard mainmount seemed to have blown.

We eased to a stop and had the aft observer confirm the blown tire. Sure enough, the tire tread was completely gone, although the sidewall appeared intact. All that was left of the tread was the white cord. We called for a tug and shut down.

Apparently, we had landed *right on* the arresting gear, which peeled the tread from the tire. The tire was actually still inflated, but the runway was littered with pieces of tread. The underside of the wing and flaps had numerous holes from the flying rubber. The largest piece of rubber was about a foot long and had imbedded itself in the starboard flap. There was no evidence of FOD damage to the engine.

Some of the toughest decisions are those made with the least information. These are the times when instinct and experience should prevail. If something doesn’t seem quite right, it probably isn’t. ◀

LCdr. Romano is a Selected Reservist with VP-64. While on active duty he flew with VP-22 and NADC Warminster.

Advice from a Hinge

By Lt. John Gremmels

Being the schedules officer for the squadron has many unique advantages. You can always schedule someone junior to preflight the alert E-2 after night flight operations.

One night, the flu bug spoiled my scheme and my preflighting new guy turned into a "hinge" (a lieutenant commander). The let's-flip-for-the-preflight ploy didn't work so I ended up preparing for a stroll through the lovely 100-degree, 98-percent humidity of the Arabian Gulf night.

I grabbed my SV-2 and helmet. As I headed for the flight deck, a sarcastic lieutenant stopped me and said, "You can't use the SV-2 without a torso harness."

"What?" I asked, believing this remark to be just another volley in the never-ending game of tricking your buddy into doing something stupid.

He continued to point out that if I fell off the deck and my SV-2 wasn't strapped to anything, it would just come off over my head and I'd be treading water trying to stay afloat.

The MO then added, "He's right. Proper flight-deck uniform always...blah, blah...harness...blah, blah...safety...blah, blah!" (I could never understand hinges.)

Before I could come up with a sufficiently sarcastic reply, it dawned on me that the SV-2 without a torso harness *would* come off over my head if I hit the water. I had been preflighting alerts for a cruise-and-a-half in just my vest and no one ever bothered to correct me.

What else hadn't I thought about? What haven't I brought to other people's attention? Did someone think I had been around long enough to know better? Was I too much of a jerk to be told anything? Wearing an SV-2 without a harness might not be a major omission, but non-major items tend to add up. We should tell someone every time we see them do something unsafe—no matter how obvious the mistake is—or no matter how much experience that person has.

And if someone tells us, we ought to listen.

Lt. Gremmels flies with VAW-117.

Vultures' Row

This list includes Flight, Flight Related and Ground Class A Mishaps.
Classifications and descriptions are subject to change.

| DATE | PLATFORM | COMMAND | DAY; NIGHT | FATAL | FLIGHT REGIME; LOCATION |
|--------|----------|-----------------|------------|-----------|---|
| 1 Oct | F/A-18B | NATC PAX | D | 1 civ | Approach wave-off; Pax River, MD |
| 4 Oct | AH-1W | HMM-365 | D | 1 | Hot-refueling (AGM); At sea |
| 13 Oct | HH-1N | VXE-6 | D | 3 (2 civ) | En route; Antarctica |
| 16 Oct | F-14A | VF-302 | D | 0 | ACM; Key West, FL |
| 20 Oct | CH-46E | HMM-262 | N | 0 | Night taxi attempted takeoff; MCAS Futenma, Okinawa |
| 28 Oct | A-4M | FIT WEPS School | D | 0 | Simulated strike; 45nm from Yuma, AZ |
| 1 Nov | F/A-18D | VMFA (AW)-225 | D | 0 | High-speed abort; 29 Palms, AZ |
| 3 Nov | EA-6B | VAQ-129 | D | 3 | Takeoff; El Centro, CA |
| 4 Nov | CH-53E | HMM-261 | N | 5 | NVG ship ops; At sea |
| 8 Nov | CH-46D | HC-11 | D | 0 | Vertrep; At sea |
| 22 Nov | F/A-18A | VFA-97 | N | 0 | Night catapult; At sea |
| 25 Nov | T-2C | VT-23 | D | 0 | Single-engine approach; Kingsville, TX |
| 9 Dec | AV-8B | VMA-214 | D | 0 | En route; Yuma Range, AZ |
| 15 Dec | F-14A | VF-33 | D | 0 | ACM; Oceana Op Area |
| 17 Dec | F-16N | VF-126 | D | 1 | Climb out; Idaho Falls, ID |
| 22 Dec | LC-130F | VXE-6 | D | 0 | Landing; Antarctica (not USN) |
| 23 Dec | F-14A | VF-201 | D | 1 | ACM; Dallas, TX |
| 18 Jan | F-14A | VF-101 | D | 0 | ACM; Key West, FL |
| 25 Jan | F-14A | VF-24 | N | 0 | FCLP; NAS Miramar, CA |
| 13 Feb | CH-53D | HMH-363 | N | 0 | Unaided external lifts; Somalia |
| 15 Mar | F-14B | VF-101 | D | 2 | Pilot fam; N. Carolina Coast |
| 21 Mar | SH-2F | HSL-37 | N | 3 | SSC; At sea |
| 22 Mar | A-6E | VA-85 | N | 0 | Takeoff; Fallon, NV |
| 22 Mar | CH-53D | HMH-463 | D | 0 | PMFCF; MCAS Kaneohe, HI |
| 26 Mar | E-2C | VAW-124 | N | 5 | Foul-deck waveoff; At sea |
| 13 Apr | F-14D | VF-11 | N | 0 | FCLP; San Clemente Is. |
| 14 Apr | A-6E | VA-95 | D | 0 | Mid-air collision with civ. acft. (low level); WA |
| 14 Apr | SH-2F | HSL-32 | D | 0 | ASW; At sea |
| 27 Apr | H-46D | MCAS | N | 0 | En route; Beaufort |
| 29 Apr | F-14A | VF-21 | D | 0 | ACM; Atsugi |
| 12 May | AV-8B | VMA-211 | D | 0 | En route; Yuma |
| 19 May | VH-60 | HMX-1 | D | 4 | PMCF; MD |

Flight Leaders...

Peter Mersky



don't be brief in your brief!

